

A NEW *PAPILIO* FROM COLOMBIA AND A NEW SPHINGID FROM NEW GUINEA

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In 1924 my brother-in-law, while involved in a mission to reorganize the Columbian army, participated in a collecting trip in the Putumayo Valley, which netted some 5000 butterflies. Later I was able to acquire a share of this lot, and found among its contents a new species. I checked in Seitz Volume V, but was unable to find anything like it.

I sent the butterfly to Dr. Jordan of the Tring Museum, but his tremendously rich collection did not reveal anything similar. At this point Dr. Jordan forwarded the specimen to Dr. Tams of the British Museum of Natural History. He too, could not discover anything resembling this *Papilio*, but wrote me that it seems to belong to an unknown species worth describing.

Papilio dospassosi Rütimeyer, new species

This species has a systematic arrangement close to *Papilio isidorus* Doubleday. According to Dr. Tams, British Museum, it bears resemblance to *Papilio trapeza* R. & J. and *P. xynias* Hewitson, but belongs to group *machaon* Linne.

Ground color dark on both primaries and secondaries. Expanse 67 mm from apex to apex. Head and palpi dark, eyes without hairs. Collar with two little white spots. Three big red marks on each side of thorax. Abdomen dark without distinct markings. Forewing, upperside, in cell 1a and 1b (method of Aurivillius, Seitz Vo. XIII) white mark similar to *Papilio xynias* Hewitson, but smaller, pure white, length 6 mm, not reaching second vein. Hindwing, upperside, with two red patches, smaller though similar to *Papilio trapeza* R. & J. A third red mark near anal angle. Fringes of forewing between veins 1-5, and hindwing between all veins, white.

Undersurface of forewing dark without detectable markings; hindwing, with 3 white round spots, middle largest, under the 2 red spots of upperside. These 3 white round spots represent the principle distinguishing characteristic from other *Papilio*.

Holotype male: S. E. Colombia, in the valley of the Rio Putumayo, a tributary of the Middle Amazon, August, 1925, collected by Henry Pillichody, deposited in the American Museum of Natural History, New York.

I am naming this new species as a very modest sign of my gratitude to Dr. Cyril F. dos Passos, for his most generous gifts of butterflies, especially *Oeneis* Hübner, some years ago.

The second species is easily recognized as a typical *Macroglossum*. Its main character lies in the peculiar fact that the yellow band of the upper surface of the secondaries extends further into the primaries.



EXPLANATION OF FIGURES

Figs. 1-2, *Papilio dospassosi* Rüttimeyer; 1, upperside; 2, underside. Figs. 3-4, *Macroglossum moeckii* Rüttimeyer; 3, upperside; 4, underside.

However in this instance as a white continuous band until the second vein. This does not occur in any other *Macroglossum* species.

I sent this hawk moth to Dr. Jordan who forwarded it to Mr. Riley of the British Museum of Natural History. Both sent it back to me with the identical observation: "never seen, absolutely unknown."

Macroglossum moeckii Rüttimeyer, new species

Expanse from apex to apex 51 mm. Head brown without markings. Thorax brown above, white below. Abdomen bright brown, first two segments hidden by thick layer of reddish brown hairs. Third and fourth segments show yellow spot on side of abdomen. All segments with four wedge-shaped strips. Underside of abdomen with a narrow white band.

Forewing with dark disc plus dark colored surface surrounding short white area on dorsal margin before tornus. Dark area tapering towards under apex, where dark patch located—somewhat similar to *rectifascia* Fldr. and *imperator* Btlr. (both from Ceylon). White pretornal area represents a distinguishing characteristic, yet somewhat like white band of *errans* Wlkr., cut short, with clear-cut boundary. Hindwing dark with exception of 2-4 mm wide yellow band, resembling *nubilum* R. & J. Fringes slightly brighter.

Undersurface brown. Forewing 3 dark bands costa to back edge. Outer edges deeper brown. Hindwing with yellow band along anal edge.

Holotype male: Schouten Islands, off N. W. New Guinea. It was obtained from Mrs. Walsh, well known in worldwide entomological circles

as a collector at Sukabumi, south of Djakarta, Java, Indonesia. This specimen is being deposited with the American Museum of Natural History, New York.

I name this species as an expression of my deepest gratitude to Arthur Moeck, of Milwaukee, Wisconsin, U.S.A., for all the co-operation and encouragement received from him over a period of years.

ACKNOWLEDGMENTS

I am indebted in describing either or both of these specimens to: Captain Henry Pillichody, my brother-in-law, now residing in Switzerland; Dr. Karl Jordan, chief of Tring Museum; Dr. Tams, director of the Entomological Section of the British Museum of Natural History; Mr. Riley, first assistant of the lepidopterological collections of the British Museum of Natural History.

THE EFFECT OF X-IRRADIATION ON THE LARVAE OF *COLIAS PHILODICE* (PIERIDAE)

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Extensive studies on the effects of X-irradiation on Lepidoptera have not been reported. I believe that lack of interest is due to statements in the literature that members of the Lepidoptera are very resistant to radiation. In a series of experiments, I have found that larvae of Lepidoptera are quite sensitive and responsive to moderate dosages of X-rays. In a previous paper, we reported observations on the marked sensitivity of the larvae of *Papilio polyxenes asterius* Stoll to radiation (Arnold & Arnold, 1968). In the present paper I show that larvae of *Colias philodice* Godart are somewhat more tolerant to moderate dosages of X-rays. The resulting adults showed a variety of deformities, which are being studied histologically.

MATERIALS AND EXPERIMENTAL METHODS

Females were collected August 16, 1966, near Palos Park, in Cook County, Illinois. They were immediately caged with their foodplant red clover, *Trifolium pratense* L. A total of 390 ova were deposited by the same evening. On August 22, 265 larvae emerged. The remaining ova hatched on August 23 and 24. The 260 larvae used for the experiment